

## Metric System: (Unit 1A.1)

- Way of measuring things
- 7<sup>th</sup> base units:
  - meters  $\rightarrow$  length/width/height (m)
  - liters (L)  $\rightarrow$  volume
  - kilogram (kg)  $\rightarrow$  mass
  - seconds (s)  $\rightarrow$  time
  - Kelvin (K)  $\rightarrow$  temperature
  - mole (mol)  $\rightarrow$  measure of amount
  - Amperes (A)  $\rightarrow$  current
  - Candela (cd)  $\rightarrow$  light intensity

- Prefixes:

- kilo (k)  $\rightarrow 1 \text{ km} = 1000 \text{ m}$

- hecto (h)  $\rightarrow 1 \text{ hL} = 100 \text{ L}$

- deca (da)  $\rightarrow 1 \text{ dag} = 10 \text{ g}$

- BASE (0.1)

- deci (d)  $\rightarrow 1 \text{ dm} = \frac{1}{10} \text{ m}$

- centi (c)  $\rightarrow 1 \text{ cL} = \frac{1}{100} \text{ L}$  (0.01)

- milli (m)  $\rightarrow 1 \text{ mg} = \frac{1}{1000} \text{ g}$  (0.001)

- Converting units:

1. Figure out where you are starting and where you are finishing.

2. Find the decimal and move it the same way as you did in step 1.

- If move to the right (larger to smaller), then you move the decimal to the right.
- If you move to the left (smaller to larger), then you move the decimal to the left.

• Examples:

$$1) \quad \underbrace{0.01}_{\text{red}} \text{ m} = \underline{0.01} \text{ hm}$$

$$2) \quad 2 \cdot \underbrace{500}_{\text{red}} \text{ g} = \underline{2500} \text{ g}$$

$$3) \quad \underbrace{0.17504}_{\text{red}} \text{ dL} = \underline{0.17504} \text{ dL}$$

$$4) \quad 2.16 \text{ g} = \underline{0.00216} \text{ kg}$$

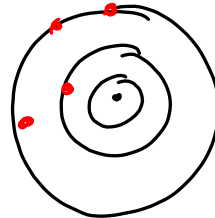
$$5) \quad 3.2 \text{ L} = \underline{320} \text{ cL}$$

$$6) \quad \underline{1} \text{ m} = \underline{100} \text{ cm}$$

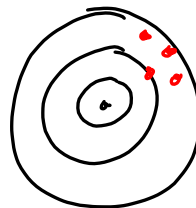
$$7) \quad 9.3 \text{ dam} = \underline{93000} \text{ mm}$$

- Precision → A measure of the degree to which measurements made in the same way agree with each other.
- Accuracy → Degree to which measurements agree with the true or accepted value

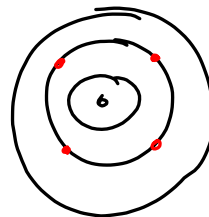
NOT Accurate  
NOT Precise



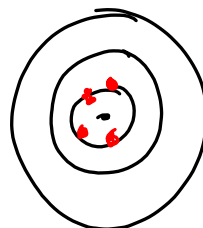
NOT Accurate  
Precise



Accurate  
NOT Precise



Accurate  
Precise



- Prefixes in order from largest to smallest:

kilo, hecto, deca, base, deci, centi, milli:

1000   100   10   1    $\frac{1}{10}$     $\frac{1}{100}$     $\frac{1}{1000}$

- A way to remember:

King Henry died by drinking chocolate  
milk.